

Application No.: 10/664,569
Office Action dated: September 7, 2006
Response to Office Action dated: December 7, 2006

AMENDMENTS TO THE DRAWINGS

Please replace the previous Sheets 2/4 and 4/4 with the enclosed Replacement Sheets 2/4 and 4/4.

REMARKS

This Amendment and Response is submitted in reply to the Office Action dated September 7, 2006, in which the Examiner:

- objected to the drawings;
- rejected claims 1-14 under 35 U.S.C. § 112, second paragraph, as indefinite;
- rejected claims 1-4, 6, 7 and 12-14 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,329,125 to Chambers ("Chambers '125");
- rejected claims 1-4, 6, 7 and 12-14 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,470,774 to Chambers ("Chambers '774");
- rejected claims 1-4, 6-9 and 12-14 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3,221,064 to Ayling;
- rejected claims 1-4, 6-9 and 12-14 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 2,935,248 to Gerteis;
- rejected claim 5 under 35 U.S.C. § 103(a) as unpatentable over Chambers '125 in view of U.S. Patent No. 6,692,234 to Rousseau;
- rejected claim 5 under 35 U.S.C. § 103(a) as unpatentable over Chambers '125 in view of U.S. Patent No. 2,160,401 to Engelman;
- rejected claims 10 and 11 under 35 U.S.C. § 103(a) as unpatentable over Gerteis in view of JP8-247021; and
- rejected claims 10 and 11 under 35 U.S.C. § 103(a) as unpatentable over Ayling in view of JP8-247021.

Claims 1-14 are currently pending. The current Amendment cancels claims 4 and 6, amends claims 1-3, 5 and 7-14, and adds new claims 15-18, leaving claims 1-3, 5 and 7-18 pending upon entrance of the current Amendment. Claims 1 and 15 are independent claims. Applicants respectfully traverse the objections and rejections below.

The drawings were objected to as missing element 33, described in paragraph [0043] of the Specification. Applicants thank the Examiner for bringing this to our attention. Figure 4 has been amended to properly number

element 33. Accordingly, Applicants respectfully request this objection to the drawings be withdrawn.

The drawings were also objected to as not showing the baffles described in paragraph [0045] of the Specification. Paragraph [0045] references baffles 37. Applicants note that baffles 37 are shown and labeled in Figure 2. Applicants have amended Figure 2 to more clearly indicate the structure associated with the lead line 37. Accordingly, Applicants respectfully request this objection to the drawings be withdrawn.

The drawings were further objected to as not showing the structure of claims 5 and 7. Applicants note that “the suction opening, whose edges are rounded” of claim 5 is shown at least in Figure 2, element 21, and that “the suction gas channel... formed by a recess in the retainer element...” of claim 7 is shown at least in Figure 4, elements 32 and 33, and in Figure 2, as suction channel 22. Accordingly, Applicants respectfully request this objection to the drawings be withdrawn.

Claim 1 was rejected under 35 U.S.C. § 112, second paragraph, based on the claim recitation “particularly” and because “[i]t is also not clear what structure forms the suction gas channel.” (Office Action, p. 3.) Regarding the former basis for the § 112 rejection, the amended claim 1 no longer includes the recitation “particularly.” Regarding the latter basis, the amended claim 1 more particularly recites the location of the suction gas channel. To the extent that the amended claim 1 does not fully address this basis for rejection, Applicants further note that breadth does not equal indefiniteness. MPEP 2173.04. For at least the above reasons, Applicants respectfully submit that the rejection of claim 1 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claims 2 and 3 were rejected under 35 U.S.C. § 112, second paragraph, stating “...there is no reference frame for “radial” and “radially.” (Office Action, p. 3.) Applicants respectfully submit that in the amended claims 2 and 3, the reference frame for these recitations is clear. Accordingly, Applicants

respectfully submit that the rejection of claims 2 and 3 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claim 4 was rejected under 35 U.S.C. § 112, second paragraph, based on the recitation "large" being an "unbased comparison." (Office Action, p. 3.) Claim 4 has been cancelled, rendering this objection moot.

Claim 5 was rejected under 35 U.S.C. § 112, second paragraph, based on in being unclear in what structure the suction opening is formed. Applicants respectfully submit that the amended claim 1, to the extent clarification is necessary, clarifies this issue. Accordingly, Applicants respectfully submit that the rejection of claim 5 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claims 6-14 were rejected under 35 U.S.C. § 112, second paragraph, although no further basis for these rejections was specified. Applicants believe, therefore, that the amendments and arguments in response to the § 112 rejections of claims 1-5 fully address the rejection of claims 6-14, and request that the rejection of claims 7-14 (claim 6 having been canceled, rendering its rejection moot) under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claim 1 was rejected under 35 U.S.C. § 102(b) as anticipated by Chambers '125. An anticipation rejection under 35 U.S.C. § 102 is improper unless a single prior art reference shows or discloses each and every claim recitation.

Applicants' amended claim 1 recites a cylinder head arrangement for a piston compressor, the cylinder head arrangement comprising a cylinder head cover having a discharge chamber therein, a valve plate having a suction and a discharge opening therein, and a retainer element, for limiting the movement of a discharge valve during discharge of compressed gas to the discharge chamber, arranged between the cylinder head cover and the valve plate, wherein a suction gas channel is defined between the retainer element and the valve plate, and extends from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air

enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

Chambers '125 does not show or disclose each and every amended claim 1 recitation. For instance, Chambers '125 does not show or disclose a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

The annular suction gas inlet passageway 122 of Chambers '125 is not disclosed or shown as being *between* a valve plate (having a suction opening *and* a discharge opening therein) and a retainer element. Insofar as the suction gas supply passageway 126 is between such elements, the suction gas supply passageway 126 is not disclosed or shown as extending from a radial outer edge, relative to a piston reciprocation axis, of a valve plate and/or a retainer element. Additionally, gas appears to enter the suction gas supply passageway 126 *axially*, relative to reciprocating piston 114, from suction passageway 127.

Thus, Chambers '125 does not show or disclose each and every recitation of Applicants' amended claim 1. Accordingly, Applicants' respectfully submit that the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Chambers '125 is improper for at least this reason, and should be withdrawn.

Claims 2-4, 6, 7 and 12-14 were also rejected under 35 U.S.C. § 102(b) as anticipated by Chambers '125. Claims 4 and 6 have been cancelled, rendering those rejections moot. The remaining claims all depend, directly or indirectly, from claim 1 and include additional recitations thereto. Accordingly, Applicants respectfully submit that the rejection of claims 2, 3, 5, 7 and 12-14 under 35 U.S.C. § 102(b) as anticipated by Chambers '125 is improper for at least the reasons stated in connection with claim 1.

Claim 1 was also rejected under 35 U.S.C. § 102(b) as anticipated by Chambers '774. Chambers '774 does not show or disclose each and every recitation of Applicants' amended claim 1. For instance, Chambers '774 does not

show or disclose a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

The suction chamber 28 of Chambers '774 is not disclosed or shown as being *between* a valve plate (having a suction opening *and* a discharge opening therein) and a retainer element. Additionally, gas appears to enter the suction chamber 28 *axially*, relative to piston 20, from suction gas passage 50.

Thus, Chambers '774 does not show or disclose each and every recitation of Applicants' amended claim 1. Accordingly, Applicants' respectfully submit that the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Chambers '774 is improper for at least this reason, and should be withdrawn.

Claims 2-4, 6, 7 and 12-14 were also rejected under 35 U.S.C. § 102(b) as anticipated by Chambers '774. Claims 4 and 6 have been cancelled, rendering those rejections moot. The remaining claims all depend, directly or indirectly, from claim 1 and include additional recitations thereto. Accordingly, Applicants respectfully submit that the rejection of claims 2, 3, 5, 7 and 12-14 under 35 U.S.C. § 102(b) as anticipated by Chambers '774 is improper for at least the reasons stated in connection with claim 1.

Claim 1 was further rejected under 35 U.S.C. § 102(b) as anticipated by Ayling. Ayling does not show or disclose each and every recitation of Applicants' amended claim 1. For instance, Ayling does not show or disclose a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis. Instead, air entering Ayling's spaces 35, 45 appears to enter *axially*, relative to piston 11, from suction passages 15 and 29.

Thus, Ayling does not show or disclose each and every recitation of Applicants' amended claim 1. Accordingly, Applicants' respectfully submit that the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Ayling is improper for at least this reason, and should be withdrawn.

Claims 2-4, 6-9 and 12-14 were also rejected under 35 U.S.C. § 102(b) as anticipated by Ayling. Claims 4 and 6 have been cancelled, rendering those rejections moot. The remaining claims all depend, directly or indirectly, from claim 1 and include additional recitations thereto. Accordingly, Applicants respectfully submit that the rejection of claims 2, 3, 5, 7-9 and 12-14 under 35 U.S.C. § 102(b) as anticipated by Ayling is improper for at least the reasons stated in connection with claim 1.

Claim 1 was further rejected under 35 U.S.C. § 102(b) as anticipated by Gerteis. Gerteis does not show or disclose each and every recitation of Applicants' amended claim 1. For instance, Gerteis does not show or disclose a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

Instead, Gerteis' circle of openings 26 are not shown or discloses as extending from a radial outer edge of either the valve movement limiting means 15 or the suction valve plate 14. Additionally, air entering Gerteis' openings 26 appears to enter *axially*, relative to cylinder 2, from annular recess 6 and openings 25.

Thus, Gerteis does not show or disclose each and every recitation of Applicants' amended claim 1. Accordingly, Applicants' respectfully submit that the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Gerteis is improper for at least this reason, and should be withdrawn.

Claims 2-4, 6-9 and 12-14 were also rejected under 35 U.S.C. § 102(b) as anticipated by Gerteis. Claims 4 and 6 have been cancelled, rendering those

rejections moot. The remaining claims all depend, directly or indirectly, from claim 1 and include additional recitations thereto. Accordingly, Applicants respectfully submit that the rejection of claims 2, 3, 5, 7-9 and 12-14 under 35 U.S.C. § 102(b) as anticipated by Gerteis is improper for at least the reasons stated in connection with claim 1.

Claim 5 was rejected under 35 U.S.C. § 103(a) as unpatentable over Chambers '125 in view of Rousseau. A rejection under 35 U.S.C. § 103(a) is improper unless the Examiner establishes a prima facie case of obviousness. A prima facie case of obviousness requires that the prior art references, alone or in combination, teach or suggest each and every claim recitation.

Claim 5 depends directly from claim 1. Chambers '125 does not teach or suggest each and every claim 1 recitation. For instance, Chambers '125 does not teach or suggest a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

Rousseau does not add to the teachings of Chambers '125, at least in that Rousseau also fails to teach or suggest a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

Thus, neither Chambers '125 nor Rousseau, nor the combination thereof, teaches or suggests each and every recitation of Applicants' claim 1. Accordingly, Applicants respectfully submit that the rejection of dependent claim 5 under 35 U.S.C. § 103(a) as unpatentable over Chambers '125 in view of Rousseau is improper for at least this reason, and should be withdrawn.

Claim 5 was also rejected under 35 U.S.C. § 103(a) as unpatentable over Chambers '125 in view of Engelman. As discussed above, claim 5 depends

directly from claim 1, and Chambers '125 does not teach or suggest each and every claim 1 recitation. Engelman does not add to the teachings of Chambers, at least in that Engelman also fails to teach or suggest a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

Thus, neither Chambers '125 nor Engelman, nor the combination thereof, teaches or suggests each and every recitation of Applicants' claim 1. Accordingly, Applicants respectfully submit that the rejection of dependent claim 5 under 35 U.S.C. § 103(a) as unpatentable over Chambers '125 in view of Engelman is improper for at least this reason, and should be withdrawn.

Claims 10 and 11 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gerteis in view of JP8-247021. Claims 10 and 11 both depend directly from claim 1 and include additional recitations thereto.

Gerteis does not teach or suggest each and every claim 1 recitation. For instance, Gerteis does not teach or suggest a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

JP8-247021 does not add to the teachings of Gerteis, at least in that JP8-247021 also fails to teach or suggest a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

Thus, neither Gerteis nor JP8-247021, nor the combination thereof, teaches or suggests each and every recitation of Applicants' claim 1. Accordingly,

Applicants respectfully submit that the rejection of dependent claims 10 and 11 under 35 U.S.C. § 103(a) as unpatentable over Gerteis in view of JP8-247021 is improper for at least this reason, and should be withdrawn.

Claims 10 and 11 were also rejected under 35 U.S.C. § 103(a) as unpatentable over Ayling in view of JP8-247021. Claims 10 and 11 both depend directly from claim 1 and include additional recitations thereto.

Ayling does not teach or suggest each and every claim 1 recitation. For instance, Ayling does not teach or suggest a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

JP8-247021 does not add to the teachings of Ayling, at least in that JP8-247021 also fails to teach or suggest a suction gas channel defined between a retainer element and a valve plate, and extending from a radial outer edge, relative to a piston reciprocation axis, of the valve plate and/or the retainer element to the suction opening such that air enters the suction channel between the retainer element and the valve plate radially, relative to the piston reciprocation axis.

Thus, neither Ayling nor JP8-247021, nor the combination thereof, teaches or suggests each and every recitation of Applicants' claim 1. Accordingly, Applicants respectfully submit that the rejection of dependent claims 10 and 11 under 35 U.S.C. § 103(a) as unpatentable over Ayling in view of JP8-247021 is improper for at least this reason, and should be withdrawn.

Having traversed each and every objection and rejection, Applicants respectfully request that the objections to the Drawings, and the rejections of claims 1-3, 5 and 7-14, be withdrawn, and claims 1-3, 5 and 7-18 be passed to issue.

Application No.: 10/664,569
Office Action dated: September 7, 2006
Response to Office Action dated: December 7, 2006

Applicants respectfully submit that nothing in the current Amendment constitutes new matter. The Amendments to the Drawings corrected an obvious error, and all Amendments to the Claims are clearly supported by the original disclosure.

Applicants believe no additional fees are due in connection with this Amendment and Response. If any such fees are deemed necessary, authorization is hereby granted to charge any such fees to Deposit Account No. 13-0235.

Respectfully submitted,

By



Marina F. Cunningham
Registration No. 38,419
Attorney for the Applicant

McCORMICK, PAULDING & HUBER LLP
CityPlace II, 185 Asylum Street
Hartford, CT 06103-3402
(860) 549-5290